

## Rymer, Edwina

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**From:** Dorsey, Nancy  
**Sent:** Tuesday, August 12, 2014 10:20 AM  
**To:** Ben Grunewald; Scott Ausbrooks; austin.holland@ou.edu; Gertson, Rod; Bauer, Robert A; Timothy\_Tyrrell@xtoenergy.com; Linda McDonald; Bates, William; Justin Rubinstein; ROVELLI, BRIAN (GE Global Research); smunews@smu.edu; ccabarcas@hilcorp.com; furnace@hilcorp.com; Shawn Maxwell; Craig.Pearson@rrc.state.tx.us  
**Cc:** rex@kgs.ku.edu; Rick.Simmers@dnr.state.oh.us; Mike Paque; Gerry Baker; Dellinger, Philip; Johnson, Ken-E; Graves, Brian; Lawrence, Rob  
**Subject:** RE: Call date Seismic Monitoring sub-group Aug 7 at 2CT

I was doing a little web surfing to find out more about the consortium our sub-group is part of, and found the States First post: <http://www.statesfirstinitiative.org/#!/States-Team-Up-to-Assess-Risk-of-Induced-Seismicity/c8t8/72D0196F-1DAB-4617-B446-B009A1D902FB>

If we are compiling information for states, then several sections of the EPA National Technical Workgroup draft report on Induced Seismicity may be a good starting point. (At the moment there are no proposed changes to these sections of the report as it nears, relatively speaking, final format.) Particularly the last appendix by USGS and the appendix on databases. That with the updates on the temporary array adoptions cover the background fairly well.

Nancy

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**From:** Ben Grunewald [mailto:ben@gwpc.org]  
**Sent:** Thursday, August 07, 2014 3:35 PM  
**To:** Ben Grunewald; Scott Ausbrooks; austin.holland@ou.edu; Gertson, Rod; Bauer, Robert A; Timothy\_Tyrrell@xtoenergy.com; Linda McDonald; Dorsey, Nancy; Bates, William; Justin Rubinstein; ROVELLI, BRIAN (GE Global Research); smunews@smu.edu; ccabarcas@hilcorp.com; furnace@hilcorp.com; Shawn Maxwell; Craig.Pearson@rrc.state.tx.us  
**Cc:** rex@kgs.ku.edu; Rick.Simmers@dnr.state.oh.us; Mike Paque; Gerry Baker  
**Subject:** RE: Call date Seismic Monitoring sub-group Aug 7 at 2CT

Attached is the latest agenda for the GWPC Annual Forum – Seattle, WA Oct 4-8.

The Induced Seismicity sessions will be Saturday afternoon and Sunday morning..

We hope to have discussions regarding the key issues the subgroup lands on in the Saturday session, as well as, your suggested technical presentations in the Sunday session covering issues you believe to be most useful to communicate out and/or gain knowledge for the benefit of the subgroup..

THANKS!  
Ben Grunewald  
405 516 4972

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**From:** Ben Grunewald  
**Sent:** Thursday, August 07, 2014 2:49 PM  
**To:** Ben Grunewald; 'Scott Ausbrooks'; 'austin.holland@ou.edu'; 'Gertson, Rod'; 'Bauer, Robert A'; 'Timothy\_Tyrrell@xtoenergy.com'; 'Linda McDonald'; 'Dorsey.Nancy@epa.gov'; 'Bates, William'; 'Justin Rubinstein'; 'ROVELLI, BRIAN (GE Global Research)'; 'smunews@smu.edu'; 'ccabarcas@hilcorp.com'; 'furnace@hilcorp.com';

'Craig.Pearson@rrc.state.tx.us'

Cc: 'rex@kgs.ku.edu'; 'Rick.Simmers@dnr.state.oh.us'

**Subject:** RE: Call date Seismic Monitoring sub-group Aug 7 at 2CT

Please see the four Induced Seismicity subgroups and the list of volunteers below...

UPDATED: 08-07-14

The State Oil & Gas Regulatory Exchange – Induced Seismicity Workgroup met recently by teleconference and among other things decided to develop FOUR specific subject sub-groups. The smaller groups will work with volunteer advisors and provide feedback to the full group. The following subgroups were established including:

1. Review of the traffic light decision approach – **Tim Baker** (OK), lead
  - Leslie Savage (TX O&G)
  - Bob Bauer (IL GS)
  - Robert Worstall (OH O&G)
  - Ryan Hoffman (KS O&G)
  - Austin Holland (OK GS)
  - Rod Gertson (Devon Energy)
  - Jeff Bull & Brian Woodard (Chesapeake Energy)
  - Kris Nygaard (ExxonMobil) & Tim Tyrrell (XTO)
  - Linda McDonald (SandRidge Energy)
  - David Henry (Hilcorp)
  - Phil Dellinger (EPA Region 6)
  - Steve Platt (EPA Region 3)
  - Bill Bates (EPA HQ)
  - Ed Steele (GE – OGTC)
  - Scott Anderson (Environmental Defense Fund)
  - Trenton Cladouhos (AltraRock)
  - Grant Bromhal (NETL)
  - Bill Rish (Hull Risk Analysis Center)
2. Review of the concept surface motion (or ground movement) rather than (or in addition to) magnitude as a measurement that would lead to more appropriate communication to the public as well a more appropriate measurement for decisions – **Herschel McDivitt** (IN), lead
  - Craig Pearson (TX O&G)
  - Austin Holland (OK GS)
  - Bob Bauer (IL Geological Survey)
  - Jeff Bull (Chesapeake Energy)
  - Kris Nygaard (ExxonMobil) & Tim Tyrrell (XTO)
  - Carlos Cabarcas (Hilcorp) &
  - Ed Steele (GE – OGTC)
  - Shawn Maxwell (Itasca Microseismic & Geomechanical Evaluation)
3. Review of the concept of establishing information sharing data repository – **Rex Buchanan** (KS) lead
  - Leslie Savage (TX, O&G)
  - John Parrish (CA GS)
  - Ryan Hoffman (KS O&G)
  - Austin Holland (OK GS)
  - Brian Woodard (Chesapeake Energy)
  - Kris Nygaard (ExxonMobil) & Tim Tyrrell (XTO)
  - Tim Nein (Hilcorp)
  - Brian Stump (SMU)
  - Scott Anderson (Environmental Defense Fund)
4. Review of the issues regarding seismic monitoring – **Craig Pearson** (TX) lead
  - Scott Ausbrooks (AR, GS)
  - Craig Pearson (TX, O&G)
  - Austin Holland (OK GS)
  - Bob Bauer (IL, GS)
  - Rod Gertson (Devon Energy)
  - Kris Nygaard (ExxonMobil) & Tim Tyrrell (XTO)
  - Linda McDonald (SandRidge Energy)
  - Carlos Cabarcas (Hilcorp)
  - Nancy Dorsey (EPA Region 6)
  - Bill Bates (EPA HQ)
  - Justin Rubinstein (USGS)
  - Brian Rovelli (GE – OGTC)
  - Brian Stump (SMU)
  - Shawn Maxwell (Itasca Microseismic & Geomechanical Evaluation)

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**From:** Ben Grunewald  
**Sent:** Thursday, August 07, 2014 8:32 AM  
**To:** Ben Grunewald; 'Scott Ausbrooks'; 'austin.holland@ou.edu'; 'Gertson, Rod'; 'Bauer, Robert A'; 'Timothy\_Tyrrell@xtoenergy.com'; 'Linda McDonald'; 'Dorsey.Nancy@epa.gov'; 'Bates, William'; 'Justin Rubinstein'; 'ROVELLI, BRIAN (GE Global Research)'; 'smunews@smu.edu'; 'ccabarcas@hilcorp.com'; 'furnace@hilcorp.com'; 'Craig.Pearson@rrc.state.tx.us'  
**Cc:** 'rex@kgs.ku.edu'; 'Rick.Simmers@dnr.state.oh.us'  
**Subject:** RE: Call date Seismic Monitoring sub-group Aug 7 at 2CT

Friendly reminder for the TODAY'supcoming call--

Review of the issues regarding seismic monitoring - SUBGROUP

The call will be on Thursday, August 7<sup>th</sup> at 2:00 pm CT.

To join the call, please dial 1 866 777 6650 code 405 516 4974

## **August 7, 2014 Conference Call**

### **GWPC Induced Seismicity Working Group Review of:**

#### **Issues Regarding Seismic Monitoring of Earthquakes Associated with Oil and Gas Activities**

1. Define the necessity of Monitoring ie. Why Bother?
2. Describe a minimum suite of sensors and data acquisition, what kind, areal coverage needed, etc.
3. Discuss the current status of Monitoring Capability, ie. Permanent Stations, deployable arrays, detection threshold, etc.
4. Share success stories and Frustrations.
5. Discuss possible solutions, including sources of funding, organizations to task with response, maintenance of response readiness, data repository development and maintenance, etc.
6. Decide what our next steps are.

THANKS –Ben  
405 516 4972

Review of the issues regarding seismic monitoring – Craig Pearson (TX) lead

	Thursday August 7 2:00 pm CT
Scott Ausbrooks (AR, GS)	Yes
Austin Holland (OK GS)	Yes
Rod Gertson (Devon Energy)	Yes
Bob Bauer (IL Geological Survey)	No
Tim Tyrrell (XTO)	Yes
Linda McDonald (SandRidge Energy)	Yes

Carlos Cabarcas (Hilcorp)	
Nancy Dorsey (USEPA R-6)	Yes
Bill Bates (EPA HQ)	Yes
Justin Rubinstein (USGS)	No
Brian Rovelli (GE – OGTC)	Yes
Brian Stump (SMU)	Yes
Craig Pearson (TX, O&G)	Yes
Ben Grunewald (GWPC)	Yes
Mike Paque (GWPC)	
Gerry Baker (IOGCC)	